LEGENDS AND LORE OF THE HEALING ART

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III

Other Examples of Belief of Knowledge Gained from Animals

BESIDES foreknowledge of the weather, man was believed to have acquired much other useful knowledge directly from animals. The ancient Egyptians believed that the art of writing had been learnt from the sacred baboons that were kept in their temples; when a fresh baboon was admitted, its fitness was tested by the priest putting writing materials into its hand and calling upon it to write. Topsel suggests that the practice of circumcision may have been learnt from them, as the young are brought forth "circumcised, at the least wise in some appearance; whereunto the priests give great heed to accomplish and finish the work begun."

Such evidence as we have seems to point to the origin of circumcision as not a medical or sanitary measure, but rather as a feature of primitive sacrificial ritual. These sacred baboons were held to have originated the division of day and of night into twelve equal parts, so as to afford a model for construction of the water-clock.

There was a widespread tradition that music had been learnt from birds, and chief among them the nightingale; in Hindoo poetry it is the kokilas, the Indian cuckoo, that teaches melody. Birds are often credited with bringing down fire from heaven; in Polynesia it was a red pigeon, in French folk-lore the wren. The tale runs* that all the other birds, except the owl, contributed a single feather apiece to replace the scorched plumage of the wren, so as to keep it warm in the coming winter. For its ill-nature the owl was condemned to eternal seclusion during the warm day, and to perpetual suffering from cold during the night, and the other birds maintain the punishment by pestering it if it appears in sunshine. Every nation has its Prometheus; in Greek legend it was a man, among the North American Indians a stag; but the myth never tells how the fire was produced, in conformity with the circumstance that the maintenance of fire accidentally produced seems always to have antedated the discovery of how to produce it.

It would be interesting to hear the chatter of the native East African over the domestic meal after watching an aeroplane soaring in the sky; he would probably recognise in its movements, its outline, and its mode of propulsion another gift of knowledge from birds to man, confusing what is in part due to imitation with what appears to be due to instruction. Ælian* asserts that birds know all the remedies that man employs; he cites the application of marjoram to their wounds by partridges, storks, and pigeons.

The sedative properties of lactucarium, or lettuce, were widely accepted; Aristotle and Ælian† state that it is used by the dragon to relieve a distended stomach. Venus was said to have lulled her grief at the death of Adonis by throwing herself on a bed of lettuces. Experiment has

* Watkins: *Gleanings from the Natural History of the Ancients.*

* *Nat. Anim.*, V., 46.

† *H. A.*, IX., 6, and *Nat. An.*, VI., 4.

failed to show any sedative action in the juice of lactuca, and belief in its hypnotic properties is probably due to the similarity in appearance and smell to the juice of the poppy.

Fallopius* asserts that the ape taught man the laxative properties of cassia, and in view of the fondness of monkeys for fruit it is not impossible that man may have observed its laxative effect.

Dogs were said to have taught man the use of pellitory for expelling calculi; one wonders whether the belief may have arisen in an attempt to explain the name.

Animals and Knowledge of Nature of Food

If man learnt the use of drugs from animals, he must have paid a price in some cases for his knowledge. Thus horses eat aconite with impunity; birds, rabbits, and many herbivora belladonna, and its effect on horses and donkeys is but slight. Goats, sheep, and horses eat hemlock without ill-effect, yet it poisoned Socrates.

Animals seem to acquire their knowledge of poisonous plants from experience, and not by any innate instinct; our domestic animals, when transported to other countries, at first eat poisonous plants, which they learn afterwards to avoid. Snell observed that strange sheep frequently fell victims to the poisonous hellebore that grows abundantly in the valley of the Ahn, but that it is carefully avoided by the sheep of the neighbourhood. Pliny† was evidently aware that cattle did avoid certain poisonous plants, and he instances the anagallis as one; but he goes further and asserts that if they eat it by mistake they have a remedy at hand in a plant that is an antidote. Lambs and calves, grazing in the same field as their mothers, are far more prone than they to eat poisonous plants. Morgan* concluded from observations of feeding young birds with various caterpillars, beetles, and worms, that, in the absence of parental guidance, young birds have to learn by experience what is good to eat and what is not, and that they have no instinctive aversions. At first they peck at everything, but once they have found that a particular thing is distasteful or harmful, in future they entirely avoid it. Tegetmeier found that pigeons reared exclusively on wheat or barley would starve before eating beans; but if a bean-eating pigeon were introduced among them they would soon imitate and adopt the habit, instinct yielding to experience; in the same way fowls sometimes refuse maize, until they are placed with maize-eaters, when they not only eat it, but become exceedingly fond of it. Newly caught birds are apt to starve unless the cage-food is mixed with food to which they are accustomed. Each bird seems to make its own observations, its own experiments, and its own discoveries in the matter of food, and the rapidity with which knowledge acquired may be propagated is shown by the readiness with which the habits of other members of the species are imitated.

The taste for meat is not infrequently acquired by herbivorous animals, and once acquired may amount to a veritable passion. Parrots† that have lived on insects and berries have been known to acquire such a liking for meat that they have actually pecked to death animals as large as sheep and porpoises, so as to eat their flesh in place of their habitual food. Horses will take to flesh-eating, and have been known to snap up young pigeons and chickens; meat diet is said to render them savage. Reclam‡ saw squirrels and rabbits gnaw greedily bones thrown to

* *Purg. Simpl.*, 35. † *N. H.*, XXV., 92.

* *Habit and Instinct.* † Buchner: *Mind in Animals.*
‡ *Mind and Body*, 1859, p. 300.

vegetable food; both Darwin and Brehm record instances of cattle taking to a diet of fish on certain islands when pasture failed them.

Foodstuffs in Primitive Pharmacy

Man, doubtless, will have acquired much of his knowledge of the nutritive and medicinal value of plants by the same method as the lower animals, by experience. Like them, too, he will have profited by imitation, and imitation embracing his observation of the habits of the lower animals. It must have been of immense importance to man, when he depended largely for food on wild animals captured in the chase, to watch them closely so as to know their habits. Baited trap-holes, being one of the chief modes of capturing game, a knowledge of the favourite foods of animals must have been a first condition of success. This, together with his passion for their domestication, to be at once his companions and his servants, must have given him an intimate knowledge of their foods and their effects. Further, there is not wanting evidence that he did use animals and even his fellow* men as subjects of research in this field, for the Philippine pygmies, if they fancied a fruit were poisonous, would soak it for two or three days, and then give it to one of their dogs; if he seemed none the worse, they would eat it themselves. The American Indians first tested arrow poisons on the old women of the tribe.

That a good deal of man's medicinal knowledge arose accidentally in his efforts to extend the range of his food-supply is suggested by the prominent place occupied by foodstuffs in primitive pharmacy. Honey, milk, butter, and cheese appear and reappear in every conceivable combination. We shall be less likely to underrate the importance of honey in the dietary of primitive man if we bear in mind that it was his only readily available supply of sugar. Honey and the honey-bee were surrounded with a sacred halo of mystery in the mind of the primitive zoologist. He believed the bees to be generated from putrid flesh, just as fish and frogs seemed to be generated from the mud, when the rain filled the pools with water. This was not an unnatural belief, for he saw the maggot-like larvæ in the honey-comb, and they seemed to him for all the world the same as the maggots engendered in fly-blown putrid meat. Pure honey, engendered in the air, might be found in its elemental purity at dawn deposited on the leaves of trees and elsewhere; how else can we account for the deposit on the leaves of the lime? Pliny describes various kinds of honey with the gusto of an up-to-date apiarist, but he awards the palm to summer honey, for "Nature has revealed in this substance properties most valuable to mortals * * * for, after the rising of each constellation, and more particularly those of the highest rank, or after the appearance of a rainbow, if a shower does not ensue, so that the honey-dew becomes warmed by the rays of the sun, there is produced a medicament, and not real honey, a gift sent from heaven for the cure of diseases of the eye, ulcers, and maladies of the internal organs. If this be taken at the rising of Sirius, and this should happen to fall on the same day as the rising of Venus, Jupiter, or Mercury, as is often the case, the sweetness of this substance and the power it possesses of restoring men to life are not inferior to those attributed to the nectar of the gods." Long before the time them, though they had abundance of

*Zuniga: *Franciscan Chronicle*, 1738; and Scott-Elliot: *Prehistoric Man and his Story*.

of Pliny men were aware of the occasional poisonous properties of honey, and rightly attributed them to the flowers from which the honey was gathered. Xenophon records the toxic effect of the honey at Trebizond on some of the Ten Thousand, which has usually been referred to the Azalea Pontica and Rhododendron Ponticum, which abound in that neighbourhood; poisonous honey is met also in Pennsylvania, gathered from Kalmia latifolia. All the stories of Mithridates having been the discoverer of antidotes seem to be referable to the knowledge that many poisonous plants grew in his kingdom on the shores of the Euxine; as ducks were seen to feed on the herbage with impunity, it was not unnatural that their blood should be regarded as an antidote to poisons.

Mixtures of honey with milk or butter are favourite dishes of the Arabs and Hindoos, and recall the Biblical injunction, "Butter and honey shall he eat." Honey is much used in India in ointments in place of animal fats, which putrefy readily in hot climates. In this country it has been used as a vehicle for drugs, or as a palatable addition with mildly laxative effect.

Milk was much used as a vehicle for drugs and butter as an ointment or the base of an ointment, while Zoroaster seems to have anticipated Metchnikoff by living 30 years in the wilderness upon cheese prepared in such a way as to render him insensible to the advances of old age.

Poisons and their Antidotes

In the matter of poisons and their antidotes, it was believed that man had learnt many valuable lessons from animals. The poisonous bite of the serpent and the source of its poison were bound to excite speculation. Ælian* lays it down that animals acquire poison by feeding on poisonous things; thus the sting of a wasp, he says, is far more dangerous if it has tasted a viper, and a fly, if it has touched anything of the kind, has a more harmful bite and causes greater pain. Homer* depicts the dragon lying before its lair eating baleful herbs, and Vergil† paints the same picture of the snake. Numerous antidotes to the snake's poison were in use. Pliny‡ says that the plant chondrion, the identity of which is obscure, was employed with good effect, as field-mice were known to eat the plant when bitten by snakes. The same writer§ asserts that the tortoise eats the plant known as cunile bubula so as to recruit its powers of effectually resisting serpents, and he recommends the juice of the plant in wine to be taken internally, and the bruised leaves to be applied locally for their bite. Aristotle‖ says that the tortoise, when it has eaten a snake, feeds on marjoram, and he declares that one was seen to do so repeatedly during its repast; seeing this the observer rooted up the marjoram with fatal results to the tortoise. Some of the larger tortoises and turtles do prey on small reptiles, and this must have seemed to call for explanation to those who were familiar for the most part with the herbivorous diet of the smaller land species. The tales of the weasel and the ichneumon in this connexion seem to be all referable to the mongoose. Lyddeker identifies the ichneumon with the Egyptian mongoose, and the similar appearance of the weasel not unnaturally led to confusion. Both Pliny and Ælian¶ say that the weasel protects itself against the serpent by eating rue, but recent experiments tend to show that the weasel will not attack serpents. Wilkinson, in his *Ancient Egyptians*, says that an Arab assured him

* *Nat. Anim.*, IX.

* *Iliad*, XXII., 93.
† *Æneid*, II., 471.
‡ *N. H.*, XXII., 45.
§ *Ib.*, VIII., 41, and XX., 61.
‖ *H. A.*, IX., 6.
¶ *N. H.*, VIII., 41, and *Nat. Anim.*, IV., 4.

that the ichneumon is very dexterous in killing serpents, and that, whenever bitten, it has recourse to a plant, of which it eats part and applies part to its wound, and then returns revived to the encounter.

Spider's venom was regarded with only less fear than that of the serpent. The tale was told that the toad, when bitten by a spider, ate the leaves of the greater plantain, and succumbed to the bite when these were not available. Deer were said to protect themselves from the poison by eating crabs.* The victims of that epidemic form of convulsive hysteria known as tarantism, which flourished over wide areas more particularly in Italy, believed themselves to have been bitten by the tarantula spider. So ingrained was this belief that Constantine the African, the most learned physician of Salerno, stated that those who were bitten were liable to eject from their stomach and bowels substances resembling a spider's web. It was nevertheless not an animal venom, but a mental poison that was propagated from person to person in a human soil sensitised by long years of pestilence and warfare. The efforts of the victims to cure themselves by wild dancing, excited and maintained by the music of the flute, may be regarded as rational therapeutics according to the notion of the day, for clearly the chemical poison should find an exit in the sweating provoked by the violent exertion of the dance. Just so, when disease is conceived as due to a demoniac mannikin within the sufferer, savages resort to violent bodily movements to effect its expulsion.

These various legends of the effect of spider's venom on animals and man rest on the most slender basis of fact. It is true that all spiders have poison-glands which communicate with fangs in the mandibles, but the smaller species are quite harmless to man and the larger animals, and it is open to question whether their poison plays an important part in the killing of insects. With regard to the tarantula there is little evidence to show that its bite can cause more than local irritation in man and other large animals; this, of course, in rare and unfavourable circumstances, may be the starting point of a secondary generalised poisoning. Some of the larger spiders can undoubtedly kill small birds and animals, but Warburton* holds that this is due to the unerring accuracy with which they drive their jaws into the vital nervous parts of their victims. Fabre, on the contrary, insists that death does not depend on the bite involving a vital part. There were some apparently, even in the seventeenth century, who did not believe in the poisonous effect of the tarantula's bite, for Ferdinando, a physician of Messapia, considered the symptoms to be those of a melancholy dependent on the imagination.

* Aristotle: *H. A.*, IX., 5; and Pliny: *N. H.*, VIII., 41.

Evidence of Healing Practices Among Animals

We may now pass from the domain of legend to the more prosaic consideration of such substantial evidence as there is of the existence of healing practices among animals, and we shall find it disappointingly slight.

Livingstone left it on record that some of the anthropoid apes staunch bleeding by pressure with their hand on the wound or by stuffing it with leaves, turf, or grass. Dr. Thomas Savage has recorded the same practice of the chimpanzee. Moore† extends the range of action to the young in the case of a female monkey which tore leaves from the trees as it fled with its wounded baby in its arms and stuffed them into the bullet wound to staunch

* *Cambridge Manuals*, "Spiders." † *Universal Kinship.*

the bleeding. Darwin* notes that the long-armed apes sometimes use their arms as crutches, swinging their bodies forward between them. The smaller monkeys exhibit considerable skill in the extraction of thorns. Moore tells of an orang-outang that was once bled for some illness which, whenever afterwards it was ill, would point to the vein in its arm, as though he wished the operation to be repeated; there is a reliable record of a monkey which similarly appealed for administration of a clyster. These records serve at least to show how readily monkeys learn to appreciate a remedy by which they have benefited. As we descend in the scale of creation, we cease to find any sure indications of the existence of a therapeutic sense; it is more than doubtful if we can refer the licking of wounds or the eating of grass by dogs to this category.

Cats exhibit a keen sense of maternity, and a mother-cat will sometimes attend fondly on its daughter during the birth of its kittens. Cabanés says that they have been known to bite the cord and carry off the kittens to their own nest. I myself can testify to what appeared to be an exhibition of the keenest sympathy of one female cat to another in these circumstances, anxiously brooding over and licking the expectant mother; but it may well be that this was no more than the prompting of a confused maternal instinct.

Cabanés† has some wonderful tales of avian surgery, so wonderful that, for all his sincerity, they would seem to call for further investigation before acceptance. He cites M. Fatio as authority for the statement that woodcock, corn-crakes, and snipe have been known to pluck their feathers and make most elaborate dressings for wounds and for fractured legs. In another instance he alleges that a blackbird with a broken leg, failing in its own efforts to dress the fracture, summoned its companions with a cry and then ligatured it admirably. It is not difficult to see how a wounded and bleeding leg may acquire an adhesive dressing of feathers without postulating the purposive use of the bird's beak in providing it, and still less a summons to other birds to assist at the operation. Anyone familiar with wounded game knows how frequently a matted tangle of blood and feathers is found adhering to a wound. In another case Cabanés mentions a quail found in Savoy with its left leg broken above the ankle. It was wearing a dressing composed of blades of grass rolled circularly round the site of fracture and bound to one another; the whole formed a lump the size of a hazel-nut, and in spite of the riding of the ends of the bones good union had been obtained. Here, again, it seems easier to imagine an accidental winding of grass-blades round the broken ankle in the bird's frantic efforts to liberate the hanging foot caught in the grass.

That auscultatory percussion is practised by birds and other animals is beyond question, yet it can hardly be argued that man adopted the practice from them. Woodpeckers, nuthatches, and tree-creepers tap the bark of trees to see if it emits a hollow sound; if hollow, they continue to tap till any insects emerge; in the same way the aye-aye lemur taps the bark in search of caterpillars, and employs its finger as a probe to search for them.

From all this there seems to emerge a strong presumption that below the level of the monkey tribe a healing sense is not existent, and only among the anthropoids is there unmistakable evidence of even a lowly stage of its development.

* *Descent of Man*, Pt. I., ch. ii.
† *Bulletin Général de Thérapeutique*, 1912.